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**414533**

67-4-5

STATUS REPORT  
BUREAU OF BUDGET APPROVAL  
WEAPON SYSTEM WS-107A-2

PROGRAM PROGRESS  
AND  
SECURITY REPORT  
CONTRACT NUMBER AF 04(647)-463  
APPENDIX IV TO EXHIBIT A  
JULY 1963

PREPARED BY  
STROMBERG-CARLSON  
A DIVISION OF GENERAL DYNAMICS CORPORATION  
EL SEGUNDO, CALIFORNIA

PREPARED FOR  
AIR FORCE SYSTEMS COMMAND  
BALLISTIC SYSTEMS DIVISION  
NORTON AIR FORCE BASE, CALIFORNIA

NARRATIVE PROGRESS REPORT FOR THE MONTH OF  
JULY 1963

AF 04(647)-463

TITAN II, TF-II  
GENERAL PROGRESS

In response to a request from SAC through BSD, Stromberg-Carlson has reviewed a recommendation to modify a specific feature of the LES System. A recommendation has been submitted favoring implementation of the change as a directed ECP.

Discrepancy reports from Stromberg-Carlson Field Services personnel on site have recently documented intersite radio propagation problems which cause loss of release signals associated with standard launch complex "radio busy" indicators. In this circumstance, busy indicators remain illuminated and all calls from those complexes must be made by using an override procedure until such time as a release signal is received. This condition is described as "radio busy lockup". The frequency with which such signal loss will occur has not yet been determined. Since the override procedure must be initiated from a test panel located in the radio signaling circuitry cabinet, Stromberg-Carlson has requested that BSD consider a simple change which will allow clearing of a "radio busy lockup" from the communication panels. Whether such an ECP would be immediate or part of a subsequent updating action would be predicated on the rate of such failures as reported from the sites.

Three Interface Change Notice Proposals (ICNP's), 61100-1, -2 and -3 were incorporated in IDP #IC-2-06061100, "Launch Complex Communication System to Intercomplex Communication System". Reproducible sepals of the revised Inter-

face Drawing Package were forwarded to the Martin-Marietta Corporation for their distribution.

Final submittal of the Stromberg-Carlson Titan II Design Data Book, originally scheduled for the July period, was held in order that all possible revision be incorporated in the last updating. The submittal is now scheduled on 23 August 1963.

Human Engineering Reports on the TF-II RTMN Multinet Test Set, MGE Figure A #6059, are nearing completion. The report has been compiled during this period from preliminary and final drawings. Release of outstanding drawings early in the August interval will furnish the final criteria necessary for submittal of the report.

Staff Engineering reviewed comments from Sheppard Air Force Base, ATC personnel on the operation and performance of the Launch Complex LES Fault Locator. Subsequent coordination with Design Engineering initiated minor drawing corrections of an as-built nature.

All Stromberg-Carlson action on approved ECP's 2002R1, 2003R1, 2005, 2007, 2009, 2010, 2011, 2012, and 2014 has been completed. The only exception to this comment is that Air Force orders procuring spares retrofit kits have not been received for end item spares affected by ECP's 2005 and 2009. Progress during this reporting period on active ECP's and MGE is as follows.

**ECP 2008R1 - LES Equipment Modification to Accommodate MGE Fault Locator**

All Stromberg-Carlson responsibilities have been fulfilled with the submittal during July of separate Design Change Notices (DCN) for TF-II and Titan II

Operational Configurations. Revisions to T.O. 31X1-2-1-184 were distributed on 3 July 1963. The remaining action to be completed is the receipt of an Air Force order for spares retrofit kits. Undelivered spare parts continue to be held at the factory pending authorization to modify the assignment of Federal Stock Numbers.

ECP 2018 - Wire to Radio Transfer Circuit Plate Modification

Kit copies of Time Compliance Technical Order #31X-1-541 were distributed directly to the operational bases (T-6, T-7, T-8), since the material required was available at all sites. Trainer TCTO #43D2-4-19-501 was distributed at the same time, but as part of a kit in accordance with ATC direction. Trainer retrofit kits were shipped to Sheppard TTC on 29 July 1963. Of the four manuals requiring revision, three were completed and distributed. The remaining manual revision and submittal of the DCN is scheduled early in the August report interval.

ECP 2020 - MGE 6025.1, Circuit Plate Test Set Patch Board Modification

Engineering data input to the TCTO was completed on 12 July 1963. The approved TCTO was completed on 26 July 1963, and forwarded to the Air Force distribution and to the factory for incorporation in retrofit kits. Material for retrofit kits has been accumulated during July and kit shipment is scheduled for 2 August 1963.

ECP 2021 - LES Modification to Add Regenerative Repeater Equipment

Design and Systems Engineering has been completed through issuance of equipment specifications suitable for accumulation of modification kit material. Preparation of drawings, instructions and the formal TCTO are in process. Every effort is being made to meet the Air Force expedited schedule for partial kit delivery to T-8 by 23 August 1963, to accommodate schedules of interfacing contractors

At this writing, it appears that initial shipment will be timely. A total quantity of 18 retrofit kits of nine configurations are required to integrate this change into T-6, T-7, T-8, and Trainer #EA001B at Sheppard TTC.

ECP 2022 - Addition of Program Board to Circuit Unit Test Set

This change provides for the addition of a program board to each of two package assemblies which accompany the Circuit Unit Test Set, MGE Figure A 6033.1. The new program board will permit testing of a new Circuit Unit Assembly, P/N 605903-637, which was added to the LES by ECP 2021. Design Engineering has prepared a computer printout of the patching list. Systems Engineering issued retrofit kit drawings and equipment specifications. Kit shipment is scheduled to coincide with that of ECP 2021 in order that the Circuit Unit Test Set will be programmed to accommodate the latter change.

MGE Figure A 6033.1; Test Set, Circuit Unit

The complete requirement of six Circuit Unit Test Sets were delivered on 26 July 1963. Delivery of the initial issue of the Maintenance Manual/IPB and revisions to operational and trainer equipment manuals will be distributed during the August reporting period.

MGE Figure A 6059; Test Set, Radio Type Maintenance Net (TF-II)

Release of engineering drawings was completed on 18 July 1963. Final inspection and test of the unit was completed on 31 July 1963, with shipment assured on 1 August 1963. Release of final drawings will allow completion of the Human Engineering Report and the Maintenance Manual/IPB. Delivery of this letter document will slip indefinitely due to the lack of an Air Force supplied technical order number.

### Configuration Control

Document #73, "Communications System Configuration Baseline Report", was forwarded to the Air Force Configuration Control Board by the Titan Program Office. The submittal, Issue #10, was dated 26 July 1963. The current baseline consists of some 236 deliverable end items, each of which was configured at shipment of the first article. The monthly updating of the Configuration Status Accounting Report was forwarded to the Martin-Marietta Corporation on 12 July 1963. Stromberg-Carlson is currently reporting status on 217 lines of data in the five sections of the report (Supplement A to Exhibit 60-18).

### Stromberg-Carlson Technical Representatives; TF-II, T-6, T-7, T-8

During the subject reporting period, the Stromberg-Carlson technical representatives have provided assistance to the Air Force in the general areas of maintenance analysis, classroom instruction and technical assistance in the acceptance of communications demonstrations on the complex level.

A review of all trouble reports submitted from the field technical representatives fails to reveal any major equipment malfunctions. All problems encountered were cleared and documented.

Due to the increased demonstration activities on all sites, classroom instructions was nominal; however, field instructions are being maintained.

### OPERATIONAL SUPPORT

#### Technical Publications

#### Titan II Preliminary T.O. 21-SM68B-2-18 (Communications System, Operational Bases

Change pages incorporating additional information needed for AEP No. 17 and ex-



panded information on selective signaling were distributed on 3 July 1963.

Titan II T.O. 33X1-3-215-2 (Circuit Plate Test Set)

The distribution of this technical order, previously delayed pending receipt of correct mailing labels from the Air Force, was accomplished on 15 July 1963.

ECP 2018

The following data required by ECP 2018 was completed and distributed to the Air Force on schedule on 3 July 1963: TCTO's 43D2-4-19-501 and 31X-1-541; change pages for T.O.'s 31X1-2-1-192, 31X1-2-1-194, 43D2-4-19-1, and 21-SM68B-2-18.

ECP 2020

The status of the data required by ECP 2020 is as follows: TCTO 33A1-3-215-501 was completed and distributed on 26 July 1963; change pages for Technical Order 33A1-3-215-2 were completed and are scheduled for Air Force inspection and distribution at the beginning of the next reporting period.

ECP's 2021 and 2022

Preparation of the TCTO's for these ECP's began and delivery is anticipated on schedule during the next reporting period.

ECP 2008

A supplement to TCTO 31X-1-512 was completed and distributed on 26 July 1963.

ECP's 2009 and 2011

Supplements to TCTO's 31X-1-539 and 31X-1-540 were completed and released for reproduction. Air Force inspection and distribution are anticipated at the

beginning of the next reporting period.

Titan II MGE Technical Orders

An Air Force in-process review of T.O. 33D9-83-7-1 (LES Fault Locator) and CFE 20 (5-Net Radio and Multinet Test Set) was successfully completed on 15 and 16 July 1963. Delivery of the LES Manual is anticipated on 2 August 1963. The manual identified by CFE 20, however, could not be delivered on schedule. Air Force failure to assign a technical order number for this manual introduces further delay in actual delivery to the users, although inspection of the manual is anticipated in mid-August.

Preparation of T.O. 33A1-3-218-2 (Circuit Unit Test Set), scheduled for delivery at the end of the next reporting period, continued.

T.O. 31X1-2-1-192, 31X1-2-1-182, and 43D2-4-22-1

Approximately 1000 change pages, reflecting use information for the Circuit Unit Test Set, were completed and released to Publications Production. Delivery of these changes is anticipated within the next reporting period.

Titan II Design Data Book

The final input to the Design Data Book was completed and released to Publications Production. Delivery is anticipated during the next reporting period.

Titan II Weapon System Manual (Integrated T.O. 21-SM68B-1)

Stromberg-Carlson personnel participated in a review of this manual conducted at Vandenberg Air Force Base on 22 through 24 July 1963. The latest Stromberg-Carlson input to this manual has not yet been printed by the Integrating Contractor.

### Manual Verification

Completion of the verification of T.O. 21-SM68B-2-17 at Vandenberg Air Force Base was delayed pending arrangements for site access by the TOCU at Vandenberg. Considerable difficulty was reported by the TOCU since simultaneous access at many points is required.

### PERSONNEL SUBSYSTEMS

Updating of AFBM 60-50A data to reflect ECP changes and comparison of technical order data with basic data continued on a limited basis.

Stromberg-Carlson personnel participated in an integration meeting at the Martin-Marietta Corporation, Denver, to adapt the scheduled maintenance requirements identified in the basic data for incorporation in T.O. 21-SM68B-6 (Inspection Requirements).

### PROVISIONING DOCUMENTATION

#### Design Change Notices (DCN)

The DCN reflecting ECP 2008 modification was completed and forwarded on 20 July 1963. Work continued on the documentation changes required by ECP 2005 and the 5-net radio at Vandenberg Air Force Base.

#### Titan II/TF-II Consolidated PPB

The parts listing for this document was completed and released for keypunch. Delivery of the document is anticipated within the next reporting period.

SECURITY REPORT

In accordance with Paragraph 2.1.3.2 of AFBMD Exhibit 58-1 entitled, "Contractor's Reports Exhibit", dated 10 October 1961, Stromberg-Carlson submits a negative report since we are experiencing no security problems which require AFBSD assistance.

[illegible]

TITAN II		PROGRAM MILESTONES	
ITEM NO			
1	PROVISIONING DOCUMENTATION & CPE MANUALS		
2	Trainer Peculiar		
3	P28 Submittal		
4	P28 Conference Location-El Segundo		
5	TP-11 Follow-On (VSS and Radio)		
6	P28 Submittal (VSS)		
7	P28 Conference (VSS) Location-Rochester		
8	P28 Submittal (Radio)		
9	P28 Conference (Radio) Location-Rochester		
10	Titan II		
11	P28 Submittal (VSS)		
12	P28 Submittal (Radio)		
13	P28 Submittal (Wire)		
14	P28 Conference (VSS)		
15	P28 Conference (Radio)		
16	P28 Conference (Wire)		
17	Titan II CPE Preliminary Manuals		
18	T.O. 21-51649-2-17 Intrasite Comm. System (VAPB)		
19	Outline Review		
20	In Process Review		
21	Preliminary Manual Delivery		
22	T.O. 21-51649-2-18 Intrasite Comm. System (OPBR)		
23	Outline Review		
24	In Process Review		
25	Preliminary Manual Delivery		
26	T.O. 31X1-2-1-182 Launch Enable System Service		
27	Outline Review		
28	In Process Review		
29	Preliminary Manual Delivery		
30	T.O. 31X1-2-1-184 Launch Enable System 1PB		
31	Outline Review		
32	In Process Review		
33	Preliminary Manual Delivery		
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